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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/509,115

06/16/2005

Albert E. Sanderson

09850-016US1

1089

26171 7590 04/26/2007
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EXAMINER

LOPEZ, FRANK D

ART UNIT

PAPER NUMBER

3745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/26/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/509,115

Applicant(s)

SANDERSON ET AL.

Examiner

F. Daniel Lopez

Art Unit

3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 28 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) 1-21, 38 and 45-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 22-24, 26-29, 33-37, 39-44 and 49-51 is/are rejected.
- 7) ☐ Claim(s) 25 and 30-32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 9/28/04; 9/23/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Election/Restrictions

Claims 1-21, 38 and 45-48 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on February 28, 2007.

Claim Rejections - 35 USC § 112

Claims 29, 41, and 43 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 29 line 2 "clearance distance increases at a low stroke to reduce starting torque" is wrong. Fig 59 is a graph of the clearance distance for various stroke lengths (cone angles). The lowest graph is described, in paragraph 236, as having the clearance below 23 mils for a stroke range of 330-1000 mils. The next lowest graph is described, in paragraph 233, as having a clearance ranging from 0 to 113 mils. Neither shows the clearance increasing at a low stroke.

In claim 41 and 43 line 1 "the support" has no antecedent basis, and "the support comprises a u-joint" is confusing, since claim 22 line 3 claims a "universal joint".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 22, 23, 27-29, 33-36, 41-44 and 51 are rejected under 35 U.S.C. § 102(b) as being anticipated by Inagaki et al. Inagaki et al discloses a variable stroke and clearance assembly and method of varying the stroke and clearance comprising two pistons (25) coupled to a rotating member (909) and universal joint (405); wherein linear motion of the rotating member varies the stroke of the piston and motion of the universal

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joint varies the clearance (e.g. fig 3, 4); and a linear linkage (10) couples the rotating member to the universal joint such that motion of the rotating member and universal joint are related; but does not specify the clearance being less than 23 mils or the range of stroke being about 33 to 1000 mils. One having ordinary skill in the variable capacity fluid machine art would recognize that a variable capacity machine can have one of a variety of stroke ranges and one of a variety of clearances, depending on the use of the machine. Therefore, one of ordinary skill would recognize that the assembly of Inagaki et al could have one of a variety of stroke ranges and clearances including a clearance less than 23 mils and a range of stroke being about 33 to 1000 mils.

Claims 22, 23, 33, 34, 36-44 and 51 are rejected under 35 U.S.C. § 102(b) as being anticipated by Wildhaber (see discussion below).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 24, 26-28, 49 and 50 are rejected under 35 U.S.C. § 103 as being unpatentable over Wildhaber in view of Hodgkinson. Wildhaber disclose a variable stroke and clearance assembly and method of varying the stroke and clearance comprising two pistons (23) coupled to a rotating member (e.g. 50') and universal joint (40, 41); wherein linear motion of the rotating member varies the stroke of the piston and motion of the universal joint varies the clearance; and a linear linkage (e.g. 44) couples the rotating member to the universal joint such that motion of the rotating

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member and universal joint are related; wherein the universal joint forms a center point between the pistons; and the rotating member moves along a slot (55) in a portion connected to a drive shaft (57); but does not disclose that the clearance is substantially constant as the stroke is varied; that the clearance is near zero over a range of stroke, or at two points of the stroke; or that the clearance is less than 23 mils, with a range of stroke being about 33 to 1000 mils.

Hodgkinson teaches, for a variable stroke and clearance assembly and method of varying the stroke and clearance comprising two pistons (15) coupled to a rotating member (57) and joint (76); wherein linear motion of the rotating member varies the stroke of the piston and motion of the universal joint varies the clearance; and a linear linkage (78) couples the rotating member to the joint such that motion of the rotating member and universal joint are related; wherein the joint forms a center point between the pistons; and the rotating member moves along a slot (102) in a portion connected to a drive shaft (12); that the clearance can be substantially constant as the stroke is varied, depending on the shape of the slot (column 5 line 44-47).

Since Wildhaber and Hodgkinson are both from the same field of endeavor, the teaching disclosed by Hodgkinson would have been recognized in the pertinent art of Wildhaber. It would have been obvious at the time the invention was made to one having ordinary skill in the art to change the shape of the slot of Wildhaber to hold the clearance substantially constant, as taught by Hodgkinson, as a matter of engineering expediency.

One having ordinary skill in the variable capacity fluid machine art would recognize that a variable capacity machine can have one of a variety of stroke ranges and one of a variety of clearances, depending on the use of the machine. Therefore, one of ordinary skill would recognize that the assembly of Wildhaber could have one of a variety of stroke ranges and clearances including a clearance less than 23 mils and a range of stroke being about 33 to 1000 mils. Since 23 mils is considered near zero, this meets the claim limitation of claims 24 and 26.

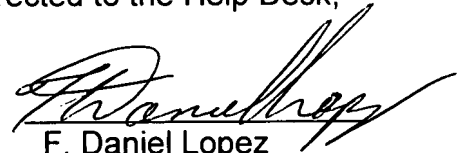
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Conclusion

Claims 25 and 30-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Lopez whose telephone number is 571-272-4821. The examiner can normally be reached on Monday-Thursday from 6:10 AM -4:40 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Look, can be reached on 571-272-4820. The fax number for this group is 571-273-8300. Any inquiry of a general nature should be directed to the Help Desk, whose telephone number is 1-800-PTO-9199.



F. Daniel Lopez
Primary Examiner
Art Unit 3745
April 19, 2007